DEPARTMENT OF THE NAVY
BOARD OF INSPECTION AND SURVEY 2600
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23521-3295

INSURVINST 4730.11J
001
26 OCT 1999

BOARD OF INSPECTION AND SURVEY INSTRUCTION 4730.11J

From: President, Board of Inspection and Survey

Subj: DOCUMENTATION OF DEFICIENCIES
Ref: (a) OPNAVINST 4700.8H
(b) OPNAVINST 4730.5L
(c) OPNAVINST 4730.7D
(d) OPNAVINST 4770.5F
(e) OPNAVINST 4780.6C
(f) OPNAVINST 4790.4C
(g) INSURVINST 4730.8L

Encl: (1) Deficiency Documentation Instructions
(2) Assignment of INSURV Numbers and ESWBS Designation

1. Purpose. To promulgate instructions governing deficiency documentation for ships inspected by the Board of Inspection and Survey (INSURV) pursuant to references (a) through (f).

2. Cancellation. INSURVINST 4730.11H.

3. Background

a. Documentation of a ship's material condition is a major requirement in fulfilling the mission of the Board of Inspection and Survey. Reference (e) states that INSURV will identify material conditions which represent departures from construction or overhaul specifications and deficiencies that substantially reduce the ship's or service craft's fitness for naval service and/or degrade its ability to perform its primary or secondary missions. Analyses of deficiencies by the Board result in findings and recommendations which are reported to the Chief of Naval Operations, and, in the case of Surveys, to the Secretary of the Navy. Documented deficiencies provide the basis for corrective action and can assist the ship and Type Commander in updating the Current Ship's Maintenance Project (CSMP).

b. This instruction describes the method by which preexisting deficiencies will be made known to the Board and explains the alpha-numeric INSURV number assigned to all documented deficiencies.

4. Action

a. As part of the pre-arrival package, a copy of this instruction will be forwarded electronically to the activity presenting the ship approximately four months prior to the scheduled inspection. For deployed ships more time may be required for proper exchange of information.

b. Activities responsible for presenting a ship to INSURV for trial or inspection shall document pre-existing deficiencies using reference (g), amplified by enclosure (1) of the instruction, and deliver these to the inspecting Board members upon their arrival aboard ship. Electronic delivery (E-Mail or disk) prior to Board arrival is acceptable.

c. For inspections and surveys of MSC ships, this instruction is augmented by the current COMSC/PRESINSURV Memorandum of Understanding.

d. INSURV shall screen submitted deficiencies and document additional ones, as warranted, for inclusion in the complete deficiency list prepared as a result of the trial or inspection. Upon the completion of each' ,inspection or trial, INSURV will assign an identification number to each deficiency as described in enclosure (2).

e. INSURV will assign an Expanded Ship Work Breakdown Structure (ESWBS) number to a deficiency to assist in data collection and analysis. The format for assigning ESWBS numbers is described in enclosure (2).

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DEFICIENCY DOCUMENTATION INSTRUCTIONS

1. Responsibility for Deficiency Documentation. Responsibility for documenting pre-existing deficiencies depends upon the type of trial or inspection being conducted and the status of the ship being examined.

a. Acceptance Trials (AT) and Combined Trials (CT). Deficiency documentation will be prepared by the Supervising Authority (Cognizant Supervisor of Shipbuilding (SUPSHIP). Deficiencies will include those originated by SUPSHIP as well as all deficiencies recommended by the Prospective Commanding Officer or Officer-in-Charge, annotated with SUPSHIP comments as desired.

b. Final Contract:;rials (FCT) and Guarantee Material Inspections (GMI). Deficiency documentation for Navy-manned ships will be prepared by the Commanding Officer or Officer-in-Charge. For civilian-manned Military Sealift Command (MSC) and civilian contract ships, deficiency documentation will be prepared by the cognizant MSC Area Commander. For other non-DOD operated ships, documentation will be prepared by the Liaison officer designated by the cognizant authority.

c. Material Inspections (MI), Special Trials and Surveys. Deficiency documentation for active ships will consist of an up-to-date CSMP. Documentation will be reviewed and supplemented by the Command rig Officer or Officer-in-Charge. Deficiency documentation for inactive ships will be prepared by the Commanding Officer, Naval Inactive Ship Maintenance Facility.

2. Criteria for Documenting Deficiencies

a. All deficiencies which require corrective action to bring the material condition of the ship to required specification will be documented. These include:

(1) Failure of equipment to meet performance or safety requirements;or the Naval Shipyard assigned custody of the ship.

(2) Requirement for excessive maintenance resources;

(3) Incomplete or unsatisfactorily completed installation, equipment, equipage, repair parts, publications or plans;

(4) Incomplete or unsatisfactorily completed inspections, certifications or tests;

(5) Conditions which are in violation of current environmental pollution standards;
(6) Deficiencies still outstanding from previous INSURV trials or inspections;
such as:
(7) Deficiencies associated with Planned Maintenance,
(a) Missing, incomplete or inaccurate Maintenance Requirement Cards,
(b) Inadequate support due to lack of test equipment, tools, lubricants or special material required to perform PMS.
(8) NAVOSH program deficiencies, as well as safety hazards and safety equipment deficiencies.
(9) Environmental Protection Program Deficiencies.

b. INSURV uses documented deficiencies to substantiate findings reported to higher authority. Ships often document relatively minor individual deficiencies, but fail to realize their combined impact on the ship's ability to carry out its mission(s). The Commanding Officer or other responsible authority should review deficiencies with this combined impact in mind.

c. The following types of deficiencies should not be presented to the Board:
(1) Unaccomplished SHIPALTS, ORDALTS and Field changes;
(2) Minor facilities maintenance, such as dirty bulkheads, burned out light bulbs, etc.

3. Deficiency Documentation Forms For ships undergoing trials, documented deficiencies may be presented to the inspectors, categorized by department, on a 3^{1}-~ inch PRISMS compatible diskette, and on a CSMP (Detail Listing by JCN).
CSMP may be e-mailed or forwarded to INSURV on disk. MSC ships shall submit standard Voyage Repair Request (VRR) vice OPNAV 4790/2K Maintenance Action Forms.
The

4. Description of Data Elements and OPNAV 4790/2K Data Blocks. The following information, in the format described, shall be included on all deficiency forms or CSMP listings.
a. Hull Number (Block B). The ship's hull number must appear on each 4790/2K form.
b. Equipment Noun;IVame (Block 5). The noun name identifies the deficient equipment or space.
clear and concise

c. Narrative (Block 35). The narrative is a statement of the deficiency as found. IT IS NOT NECESSARY TO SPECIFY CORRECTIVE ACTION REQUIRED. However, do not delete corrective action from deficiencies already on the CSMP. Brevity, without sacrificing clarity or comprehensiveness, is desired. Wording must be such that the significance of the deficiency, magnitude of the work involved and importance of its accomplishment is neither misunderstood nor overlooked. Deficiencies designated as alterations should, in addition to stating the problem, include details of the recommended Change. It is desirable, particularly in trials, that deficiencies be substantiated by reference to Detailed or General Specifications, NAVSHIPS Technical Manual, Military Specifications, NAVSHIPS Drawings or other authority. References should be documented in block 47 of the 4790/2K form.

d. Continuation Sheets (Block 36). Deficiencies requiring more than one page will have each sheet numbered. Continuation sheets will contain the hull number, and narrative, but need not repeat the noun name.

5. Classification. An individual deficiency form will not normally be classified. However, in the unusual case when a deficiency is classified CONFIDENTIAL or above, the form will be marked appropriately at the top and bottom center to the page.* If unclassified, no marking is required.

*Classified information will be placed on a separate disk.

6. Administrative Procedures. The following administrative procedures will be followed.

a. The CSMP for each inspection area (typically broken down into work centers) is to be delivered to the Board on a 3[1]-~ diskette upon arrival. INSURV members will verify and make changes, as appropriate, to the forms submitted as a result of their inspection.

b. Upon completion of the inspection, INSURV members will assign classification and identification numbers to all valid deficiency forms which are to become part of the official report. The inspection report will be prepared and distributed by INSURV using reference (g).

c. All recorded deficiencies will be provided to the Commanding Officer, Officer-in-Charge, or responsible authority via individual inspector counterparts on a 3[1]-2′ inch diskette. The ship, or responsible authority, will provide 3[1]~ inch double-sided, high density diskettes to the inspection Recorder (one

diskette per inspection area) so a copy of the deficiencies can be provided for each area by the individual inspector. All documented deficiencies will be returned to INSURV for use in preparing the final report and as a historical record of documented deficiencies.

INFORMATION SECTION

I. INSURV number (Blocks 19-24). The INSURV number is assigned by INSURV to each deficiency identified during an inspection or trial to:
-Uniquely identify a deficiency;
-Indicate the relative importance of deficiencies;
-Identify special classes of deficiencies; and
-Specify required time of correction by "starring" deficiencies (Acceptance Trials only).
D
1 IK O F[1 FH FBI
BLOCK NR: 19 20 21/22/23/24
NOTE: "BLOCK NUMBERS" refer to OPNAV 4790/2K form numbering system.

a. STARRED CARDS (Block 19). Asterisks (stars) designate a completion requirement and are used on Acceptance Trials (AT), Combined Trials (CT), and Guarantee Material Inspections (GMI).

(1). Single Starred Deficiencies: (*) A deficiency which, in INSURV's view, requires correction or waiver by the CNO before the ship is delivered to the Navy or which:

-Significantly degrades a ship's ability to perform an assigned primary or, secondary Required Operational Capability (ROC);
-Prevents the crew from safely operating or maintaining ship systems;
-Prevents the crew from safely living or messing on board;
-Precludes safe navigation, effective damage control fire fighting operations, or adequate physical security; or
-Prevents the ship from complying with environmental or NAVOSH regulations.

2. Double Starred Deficiencies: (**) Double Starred Deficiencies are applicable only to ships constructed, converted, or modernized with a separate fitting-out period assigned away from the building site, and represent deficiencies which, in INSURV's judgement, must be completed or waived by the CNO prior to the ship's departure from the building yard.

b. INSURV IDENTIFICATION NUMBER (BLOCK 20). The seven spaces of this block are filled in as follows:

1	K	0	0	1	H	B
1	2	3	4	5	6	7

(1). IMPORTANCE (Space One). A numeral indicating the relative importance of the deficiency, this is called the "Part" number, either Part 1, 2, or 3 as follows:

(a). Part 1 deficiencies are those more important deficiencies, for example, those which are likely to:

-Cause the ship to be unseaworthy;
-Substantially reduce the effectiveness of personnel or essential material;
-Reduce the ability of the ship to carry out its assigned mission or to perform in any primary mission area; or
-Cause injury to personnel or damage to vital material.
This includes significant deficiencies to the ship's safety equipment and devices.

(b). Part 2 denotes a less important deficiency that does not meet the criteria for a Part 1 deficiency, but should be corrected to restore the ship to required specifications.

(c). Part 3 identifies deficiencies that will require either a major alteration to correct (design related) or modifications that are too costly to effect during the life cycle of the ship. (i.e. passageway too narrow, overhead too low, insufficient equipment). These ate documented to identify design changes required on future ships. These deficiencies are generally coded "9" in BLOCK 45 (TYCOM Screening) and passed to the machinery History Files. The deficiency will appear on the INSURV Deficiency list. Part "3" deficiencies may include:

-Items beyond current technical authority but which should be corrected in future ship designs.

-Items not in compliance with current technical authority but may be impractical and/or too costly to correct on the ship inspected
-A recommended alteration or addition which would be beneficial but for which there is no written requirement or reference.(Such a deficiency will also be designated "A" for "alteration" in space 2 as explained in the next section.)
-Information used by INSURV for statistical analysis or documentation purposes.

2. RESPONSIBILITY (Space Two). The single capital letter "K", "G," or "A" is used to indicate responsibility for corrective action. This space should be left blank, and the designations "K" or "G," used on new construction trials, may be changed by Program Managers and/or Supervisors of Shipbuilding based on their review of construction contracts.

a. "K" indicates that, in the reviewer's opinion, correction is the responsibility of the contractor because he or his sub-contractors or vendors failed to meet the requirements of the contract.

b. "G" indicates that the reviewer considers that deficiency is the government's responsibility to correct.

c. "A" designates an "Alteration Card" which requires a design action or configuration change not authorized or not yet accomplished on the ship inspected. This may include applicable SHIPALTs, ORDALTs, MACHALTs, Field Changes, or other configuration changes which are not complete or not scheduled for this hull, recommended alterations not previously documented, and/or changes which require design action by NAVSEA. Alteration Cards should include recommendation for how correction can be accomplished either by referencing a previously engineered alteration or by detailing possible corrective action in the remarks section. A Part "3" Alteration Card ("3A") indicates a change which might contribute to the ship, but because of the ship's age or other considerations is unlikely to be accomplished or is a low priority. A Part "3" Alteration Card ("3A") could indicate an area where an older ship does not comply with current specifications, standards, or instructions, but that the effort to engineer and install the required changes are unlikely due to cost or other factors. INSURV expects that a "3A" deficiency will be passed to history without action on the ship being inspected.

3. SEQUENTIAL NUMBER (Space 3, 4, and 5). This is a sequential number or alpha-numeric assigned to each deficiency by INSURV which, along with the department code, uniquely identifies each deficiency.

4. DEPARTMENT (Space 6 and 7). A combination of two capital letters is used to identify the INSURV department having primary cognizance as follows:

DEPARTMENT	SYMBOL	DEPARTMENT	SYMBOL
ASW	AS	INFORMATION SYSTEMS	IS
AVIATION	AV	MEDICAL/DENTAL	MD
AUXILIARIES	AX	MINE COUNTERMEASURES	MN
BOILERS	BR	MAIN PROPULSION	MP
COMM, COMMAND & CONTROL	CC	NAVIGATION	NV

DAMAGE CONTROL	DC	OCCUPATIONAL SAFETY	OH
DECK	DK	OPERATIONS	OP
DIVING	DV	REPAIR	RP
ELECTRICAL	EL	REACTORS	RX
ENVIRONMENTAL PROTECTION	EP	SUPPLY	SP
HABITABILITY	HP	WEAPONS	WP

C. SUFFIX (Block 21). In special cases, a one letter Suffix is included after the INSURV number to further identify subsets of an INSURV item.

D. MISSION DEGRADE (Block 22). This block identifies certain Part 1 deficiencies which are considered as preventing the ship from carrying out some part.of its mission, and is filled in with "U" when applicable.

E. SAFETY (Block 23). The suffix "S" is added to indicate that this deficiency is identified as a safety hazard. A safety deficiency is categorized as either a Part I or Part II safety using criteria provided in OPNAVINST 5100.19 (series), as described below, as a guide. Specifically, the following applies:

1. Part 1 Safety is a deficiency which meets the criteria of Risk Assessment Code (RAC) 1 or 2. Within the category of Part I Safety, those deficiencies which meet the criteria of RAC 1, are considered to render the associated equipment "unsafe to operate."

2. Part 2 Safety is a deficiency which meets the criteria of RAC 3 or below.

NOTE: The following excerpt from OPNAVINST 5100.19D explains RAC assignment.

Risk Assessment. The RAC represents the degree of risk associated with the deficiency and combines the elements of hazard severity and mishap probability. The RAC is derived as follows:

1. Hazard Severity. The hazard severity is an assessment of the worst possible consequence, defined by the degree of injury, occupational illness, or property damage which is likely to occur as a result of deficiency. Hazard severity categories shall be assigned by Roman numeral according to the following criteria:

(a) Category I – Catastrophic: The hazard may cause death or loss of a facility.

(b) Category II - Critical: May cause severe injury, severe occupational illness, or major property damage.

(c) Category III - Marginal: May cause minor injury, minor occupational illness, or minor property damage.

(d) Category IV - Negligible: Probably would not affect personnel safety or health; nevertheless, is in violation of a NAVOSH standard.

2. Mishap Probability., The mishap probability is the probability that a hazard will result in a mishap based on an assessment of such factors as location, exposure in terms of cycles or hours of operation; and affected population. Mishap probability shall be assigned an Arabic letter according to the following criteria:

(a) Subcategory A - Likely to occur immediately or within a short period of time.

(b) Subcategory B - Probably will occur in time.

(c) Subcategory C - May occur in time.

(d) Subcategory D - Unlikely to occur.

3. Risk Assessment Code (RAC). The RAC is an of risk which combines the elements of hazard severity probability. expression and mishap

Category I	1	1	2	3
Category 2	1	2	3	4
Category 3	2	3	4	5
Category 4	3	4	5	5

Using the matrix show below, the RAC isexpressed as asingleArabic number that can be used to help determine hazard abatement priorities.

	MISHAP PROBABILITY			
Hazard Severity	A	B	C	D

F. RELIABILITY/MAINTAINABILITY (Block 24). The suffixes "M" are added to indicate:

"$_{R}$y'

and

1. "R" is assi,~[ned to deficiencies related to an equipment or component which displays low reliability requiring frequent corrective maintenance or replacement.

2. "M" indicates that the equipment or component requires excessive maintenance, that the deficiency is related to the Planned Maintenance System (PMS), or that the deficiency represents a problem with Integrated Logistics Support.

II. Expanded Ships Work Breakdown Structure (ESWBS) Numbers (Block 14). INSURV uses the ESWBS number which best designates the area, system, or equipment found deficient in order to facilitate data collection and analysis.

A. PURPOSE. In order to facilitate data collection and analysis from INSURV deficiencies, the ESWBS number will be used as the standard method of classifying and identifying ship
systems and equipment in INSURV deficiencies. ESWBS is the current numbering system used for configuration identification, status accounting, specifications, ship design, and maintenance by Commander, Naval Sea Systems Command for surface ships. It replaces and supersedes previous functional identification systems.

B. BACKGROUND. The ESWBS is a five digit functional indenturing numbering system based on the three digit SWBS system which has been used on new ship designs since 1973. ESWBS provides a top-down breakdown structure to identify ship systems, sub-systems, and components. For example:

ESWBS Functional Nomenclature

200	Propulsion Plant
260	Propulsion Support System (Fuel and Lube Oil)
261	Fuel Oil Service System
2611	Piping
2612	Pumps, Fuel Service
26121	Pumps, Fuel Service, Shaft No. 1
262	Propulsion Lube Oil System

In shipbuilding and configuration control, the ESWBS can be expanded further into the "Functional Group Code" (FGC). The FGC is a maximum ten digit number which consists of the ESWBS (first five digits) and up to five additional levels of indenture represented by single alphanumeric characters. In general, only the first three or four digits of ESWBS will be used for INSURV categorization.